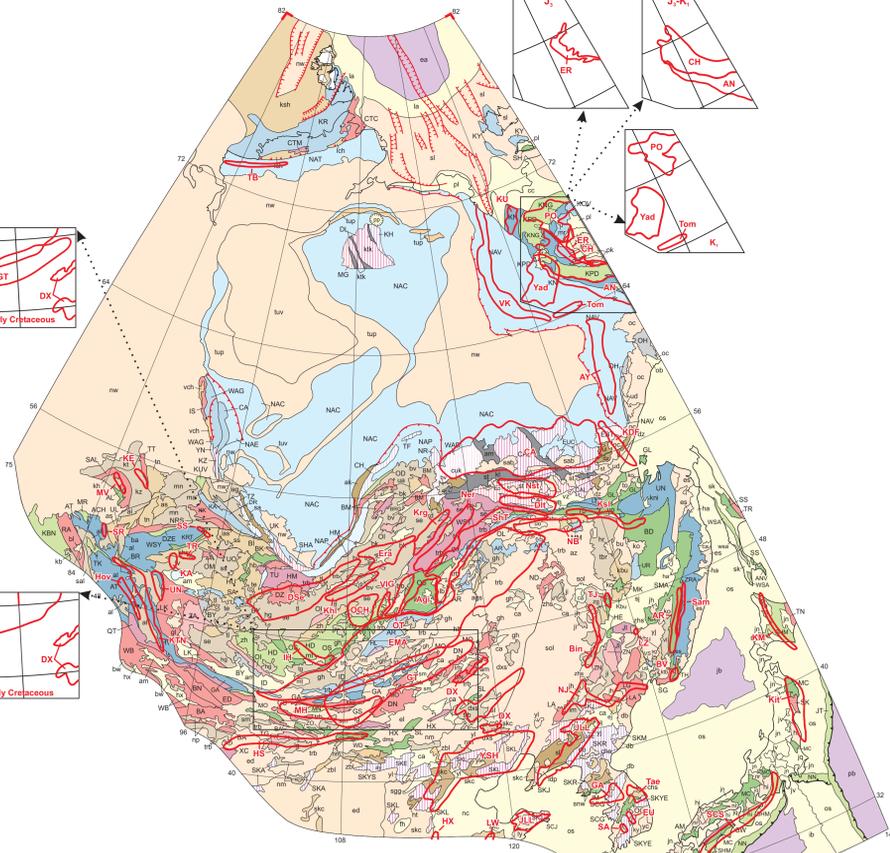
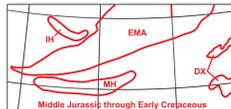
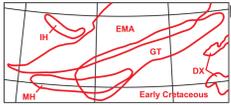


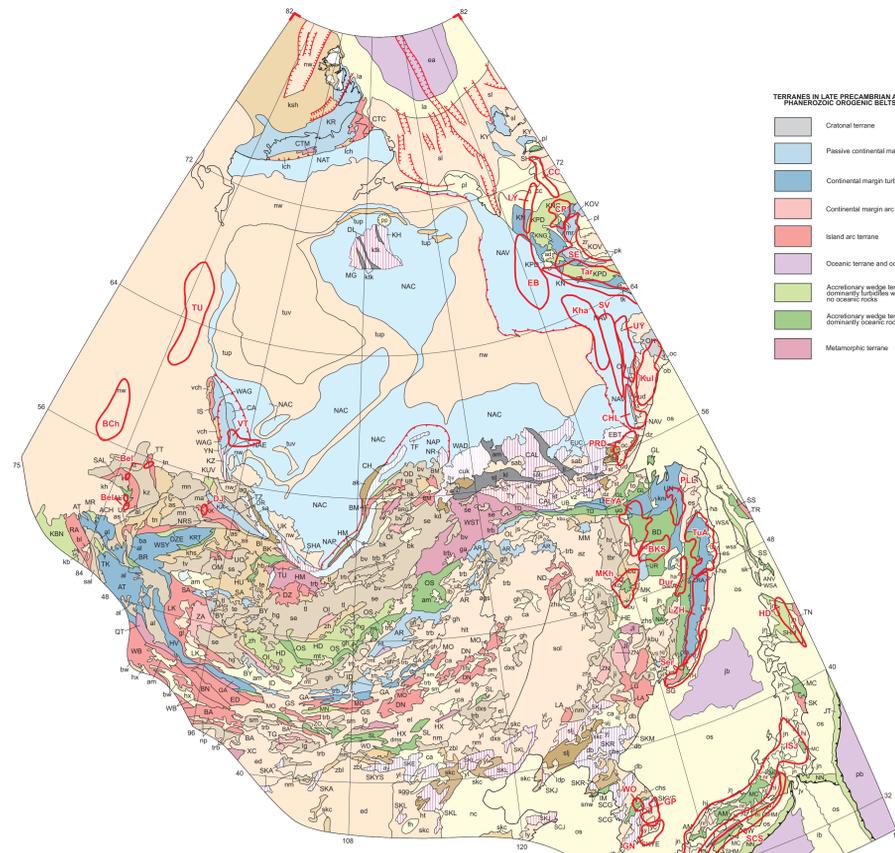
PREPARED IN COLLABORATION WITH
RUSSIAN ACADEMY OF SCIENCES
MONGOLIAN ACADEMY OF SCIENCES
JILIN UNIVERSITY
KOREAN INSTITUTE OF GEOSCIENCE AND MINERALS
GEOLOGICAL SURVEY OF JAPAN/AIST

CONTACTS, FAULTS, AND SYMBOLS

- Quaternary contact bordering overlap assemblage
- Active subduction zone
- Post-Accretion Faults
- Thrust
- Normal fault
- Strike
- Autoclinal
- Major contact
- Lake
- Neotectonic belt



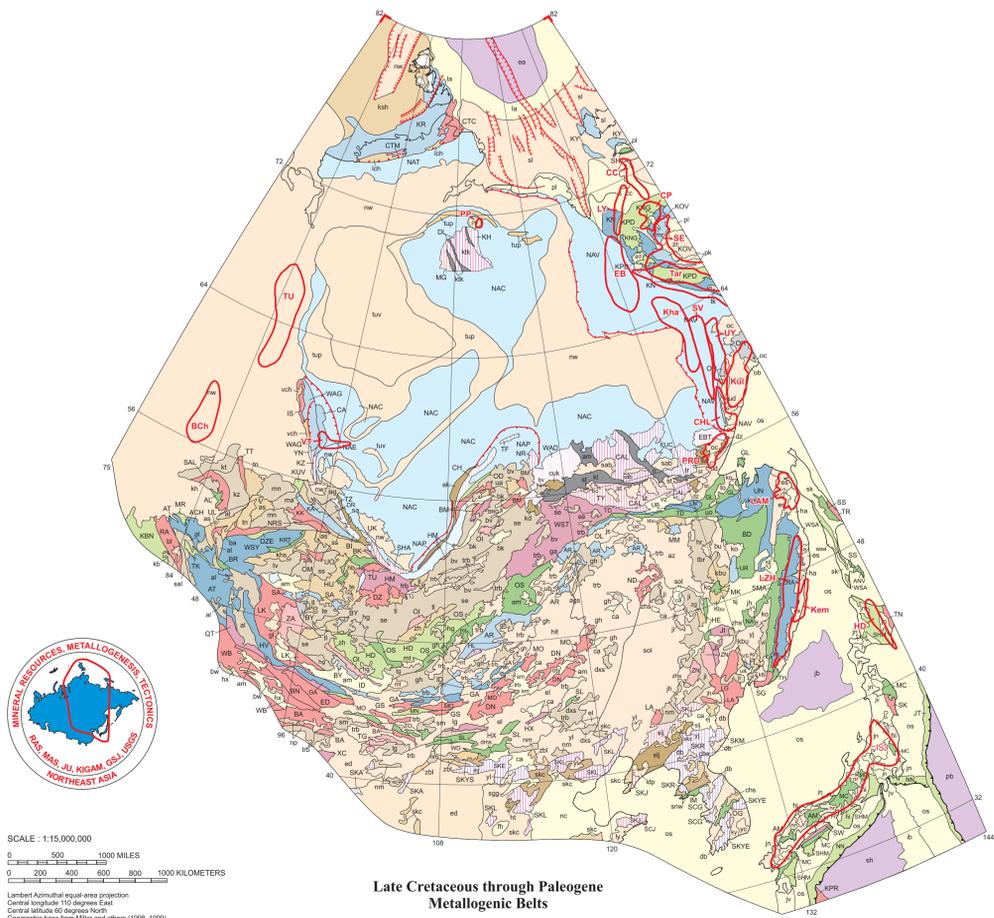
Middle Jurassic through Early Cretaceous
Metallogenic Belts



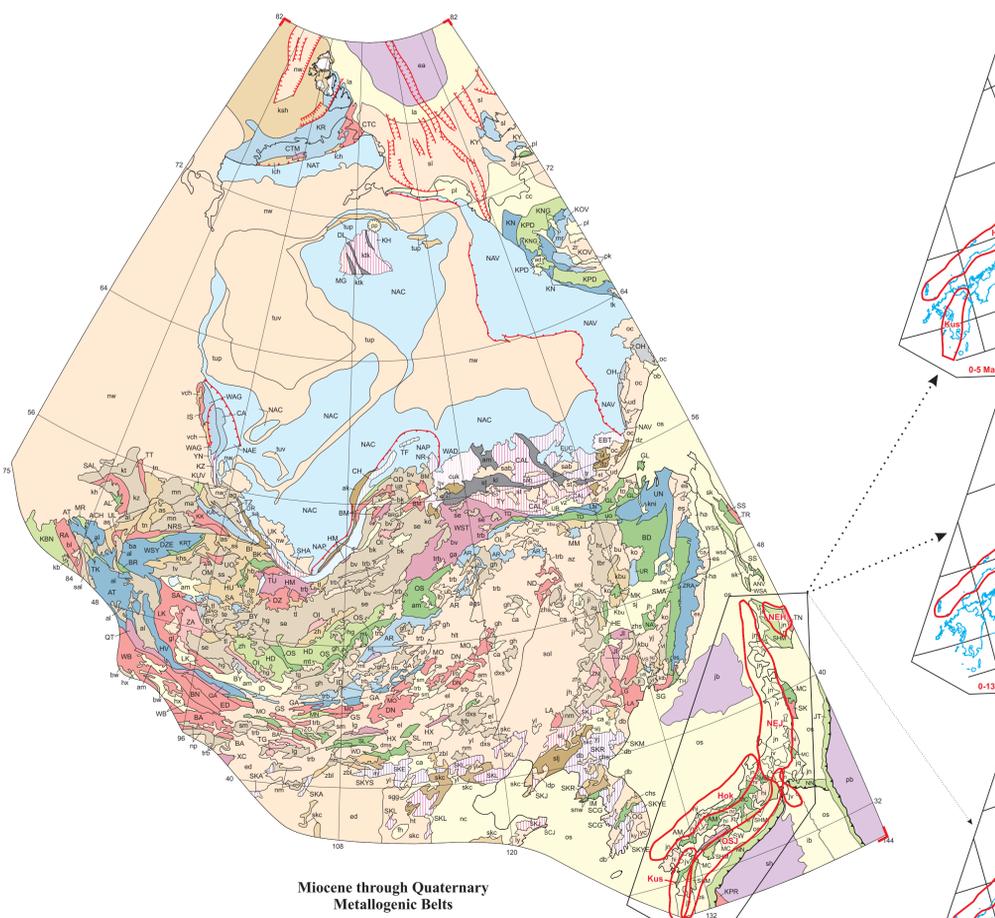
Cenomanian through Campanian
Metallogenic Belts

- EXPLANATION
- TERRAINES IN LATE PRECAMBRIAN AND PHANEROZOIC OROGENIC BELTS
- Cratonal terrane
 - Passive continental margin terrane
 - Continental margin turbidite terrane
 - Continental margin arc terrane
 - Island arc terrane
 - Oceanic terrane and oceanic crust of oceans
 - Accretionary wedge terrane A, dominantly turbidites with lesser or no oceanic rocks
 - Accretionary wedge terrane B, dominantly oceanic rocks with lesser turbidites
 - Metamorphic terrane
- TERRAINES IN EARLY PRECAMBRIAN CRYSTALLINE PLATFORM OF CRATONS AND CRATONS WITH MICROCLINAL OVERLAP
- Granite-gneiss terrane
 - Tonalite-trondhjemite-gneiss terrane
 - Granulite-orthogneiss terrane
 - Granulite-paragneiss terrane
 - Paragneiss terrane
 - Gneiss-schist terrane
 - Craton with microclinal overlap and craton margin
 - Major mélange zone

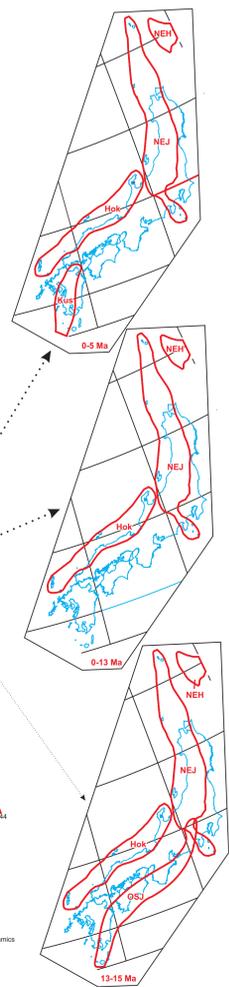
- OVERLAP AND STITCH ASSEMBLAGES
(Assemblages shown by figure codes according to age; for overlap assemblages with long age span, the code of the oldest major unit is shown.)
- Cenozoic
 - Mesozoic (Triassic, Jurassic, and Cretaceous)
 - Middle and Late Paleozoic (Devonian through Permian)
 - Late Neoproterozoic and Early Paleozoic (Vendian through Silurian)
 - Neoproterozoic through Riphean
 - Mesoproterozoic
 - Paleoproterozoic



Late Cretaceous through Paleogene
Metallogenic Belts



Miocene through Quaternary
Metallogenic Belts



SCALE: 1:15,000,000
0 500 1000 MILES
0 200 400 600 800 1000 KILOMETERS
Lambert Conformal equal-area projection
Central longitude 110 degrees East
Central latitude 50 degrees North
Geographic base from Miller and others (1968, 1969)

PRELIMINARY METALLOGENIC BELT AND MINERAL DEPOSIT MAPS FOR NORTHEAST ASIA:
SHEET 4 - MIDDLE JURASSIC THROUGH QUATERNARY METALLOGENIC BELTS

Compiled by Alexander A. Obolenskiy¹, Sergey M. Rodionov¹, Gunchin Dejiddmaa², Ochir Gerel³, Duk Hwan Hwang⁴, Robert J. Miller⁵, Warren J. Nokleberg⁶, Masatsugu Ogasawara⁷, Alexander P. Smelov⁸, Hongquan Yan⁹, and Zhan V. Seminskiy¹⁰

With compilations on specific regions by Sodov Ariunbileg¹¹, Gennadiy V. Biryul'kin¹², Jamba Byamba¹³, Yury V. Davydov¹⁴, Elimir G. Distanov¹⁵, Dangindorjin Dorjgotov¹⁶, Gennadiy N. Gamyranin¹⁷, Valeriy Yu. Fridovskiy¹⁸, Nikolai A. Goryachev¹⁹, Ayurzana Gotosuren²⁰, Alexander I. Khanchuk²¹, Anatoliy P. Kochnev²², Alexei V. Kostin²³, Mikhail I. Kuzmin²⁴, Sergey A. Letunov²⁵, Jiliang Li²⁶, Xujun Li²⁷, Galina D. Malceva²⁸, V.D. Melnikov²⁹, Valeriy M. Nikitin³⁰, Leonid M. Parfenov³¹, Nikolay V. Popov³², Andrei V. Prokopyev³³, Vladimir Ratkin³⁴, Vladimir I. Shpikerman³⁵, Vitaliy I. Sotnikov³⁶, Alexander V. Spiridonov³⁷, Valeriy V. Stogniy³⁸, Sadahisa Sudo³⁹, Fengyue Sun⁴⁰, Jiapeng Sun⁴¹, Weizhi Sun⁴², Valeriy M. Supletsov⁴³, Vladimir F. Timofeev⁴⁴, Oleg A. Tyan⁴⁵, Valeriy G. Veltzhskikh⁴⁶, Koji Wakita⁴⁷, Aihua Xi⁴⁸, Yakov V. Yakovlev⁴⁹, Vladimir I. Zhizhin⁵⁰, Nikolay N. Zinchuk⁵¹, and Lydia M. Zorina⁵²

¹Russian Academy of Sciences, Khabarovsk
²Russian Academy of Sciences, Novosibirsk
³Mongolian Academy of Sciences, Ulaanbaatar
⁴Mineral Resources Authority of Mongolia, Ulaanbaatar
⁵Korean Institute of Geology, Mining, and Materials, Taejeon
⁶Russian Academy of Sciences, Vladivostok
⁷Geological Survey of Japan/AIST, Tsukuba
⁸U.S. Geological Survey, Menlo Park
⁹Russian Academy of Sciences, Yakutsk
¹⁰Irkutsk State Technical University, Irkutsk
¹¹Jilin University, Changchun
¹²Yakutian State University, Yakutsk
¹³Mongolian University of Science and Technology, Ulaanbaatar
¹⁴Russian Academy of Sciences, Irkutsk
¹⁵Russian Academy of Sciences, Bliagoveschensk
¹⁶Ministry of Industry and Commerce, Mongolia
¹⁷Russian Academy of Sciences, Magadan
¹⁸Mongolian National University, Ulaanbaatar
¹⁹ALROSA Joint Company, Mirny

Geologic base map is generalized version of Northeast Asia Geodynamics Map (Parfenov and others, 2012)

Specific regions for these maps were compiled by the following persons.

Region or Country	Contributor
Eastern Siberia	Elimir G. Distanov, Alexander A. Obolenskiy, Nikolay V. Popov, Vasily I. Seminskiy
Transbaikalia	Anatoliy P. Kochnev, Mikhail I. Kuzmin, Sergey A. Letunov, Galina D. Malceva, Zhan V. Seminskiy, Alexander V. Spiridonov, Lyda M. Zorina
Yakutia	Gennadiy V. Biryul'kin, Yury V. Davydov, Valeriy Yu. Fridovskiy, Gennadiy N. Gamyranin, Alexei V. Kostin, Valeriy M. Nikitin, Leonid M. Parfenov, Andrei V. Prokopyev, Alexander P. Smelov, Valeriy V. Stogniy, Valeriy M. Supletsov, Vladimir F. Timofeev, Oleg A. Tyan, Valeriy G. Veltzhskikh, Yakov V. Yakovlev, Vladimir I. Zhizhin, Nikolay N. Zinchuk
Russia Far East	Alexander I. Khanchuk, Nikolai A. Goryachev, V.D. Melnikov, Vladimir Ratkin, Sergey M. Rodionov, Vladimir I. Shpikerman
Mongolia	Sodov Ariunbileg, Jamba Byamba, Gunchin Dejiddmaa, Dangindorjin Dorjgotov, Ochir Gerel, Ayurzana Gotosuren
China	Jiliang Li, Xujun Li, Fengyue Sun, Aihua Xi, Qiansheng Zheng, Hongquan Yan
South Korea	Duk Hwan Hwang
Japan	Masatsugu Ogasawara, Sadahisa Sudo, Koji Wakita